

# The Sound of Shaped Space – Architectural Acoustics Defining Spatial Function and Experience

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Sound is ever present, yet not all designers devote much thought toward how a space will sound once it is inhabited. What can educators do to inform not only society but also future architects about the importance and intensity of the auditory environment?

Do students listen to their surroundings? Do they consciously acknowledge aural conditions? All too often, the architects of tomorrow are wearing earbuds today. They appear to be constantly listening to music or talking on the phone – which is preventing, restricting, and diminishing connection to the natural aural environment. If these students are generally not experiencing and paying attention to the sounds that surround them, why would they consider acoustics necessary in experiential design? Students must be introduced to the importance and integration of architectural acoustics. As educators encourage students to consider the acoustical nature of designed space, they begin understanding materials, shapes, room volume, and programmatic adjacencies in a fresh approach. When acoustics is taught and physically demonstrated as a vital part of architectural design, students explore both the science and artistry of acoustics. Subsequently, their curiosity leads to further discovery.

The upper division undergraduate course entitled “The Sound of Shaped Space – defining what we hear” is an introduction to basic acoustical principles, which allows opportunities to interact with acousticians and acoustical design professionals, offers field trips to performance halls and recording studios, and challenges students to produce comprehensive projects that primarily incorporate natural acoustics.

The images assembled in this presentation depict separate projects as the final products of various students’ work within the one semester course. The images depict a variety of designed and built projects; ranging in size, scope, and adjacencies of supporting spaces. Regardless of the actual assignment or list of deliverables, students are taught to consider function and occupancy as the defining factor of room acoustics and the result of material selection, layering of materials and components, shape and volume of the proposed space, and mechanical systems. The results of the projects demonstrate how students understand the ramifications and consequences of cumulative design decisions. Students quickly recognize the acoustical nature of programmatic spaces begins in the schematic design phase through evaluation

of occupancy type, material selection, and specified control systems. Every design and construction decision contributes or detracts from acoustical isolation, absorption, reflection, diffusion, and overall perception of the finished space(s). Conceptual thoughts of materiality and functional space develop into the tangible manifestation of inhabitable space through the meticulous attention to materials and physical connections.

Consequently, this poster presentation is not merely documenting what has been accomplished in previous courses, but it exemplifies possibilities of acoustics courses being an integral part of architectural design for future academic projects and professional practice. Students become inclusively-minded architects when they understand the future potential of functional, sustainable, resilient, and productive space is interwoven with and codependent upon acoustics.

